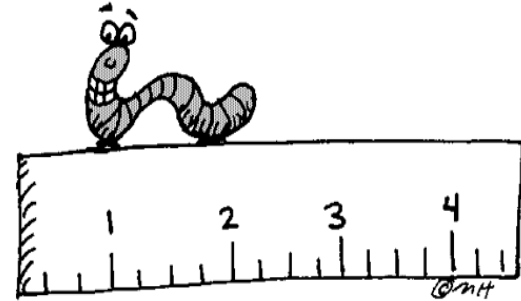


Summer Math Calendar

(Entering) Fourth Grade



Get ready to discover math all around you this summer! Just as teachers encourage students to continue reading throughout the summer to solidify and retain reading skills, we feel the same attention should be given to mathematics. Regular practice over the summer with problem solving, computation, and math facts will maintain and strengthen math gains made over the school year. The Math Specialists of Brookline have created this summer math calendar to provide your child and your family with a variety of math activities to explore this summer.

Inside you'll find creative activities that include measuring and counting everyday objects, math games, riddles, basic facts practice, math web sites and math literature books (available through Brookline's public libraries). The activities reflect a range of difficulty with the intent that your child can choose the activities that are at a "just right" level. The goal is for your child to have fun thinking and working collaboratively with you while communicating his/her mathematical ideas. While you are working on these activities, ask your child **how** he found that solution or **why** she chose that strategy. These activities help reinforce the concepts/skills your child learned this past year so that s/he can retain them over the summer.

This packet consists of 2 calendar pages, one for July and one for August, an alternate summer math calendar as well as directions for math games to be played at home. (Note: a substitute for numeral cards can be a regular deck of cards without the face cards or Uno cards.) Each month's activities are organized into 28 "math boxes." ***You can choose which activities you'd like to complete on which day.*** We encourage your child to complete 20 math boxes each month. After completing a box, color it in. In September return the calendar, with your signature, to your child's new teacher.

We recommend that you integrate an average of 15-20 minutes of math activities into your child's day, including completing the enclosed activities *and* reviewing basic facts. Number facts can be practiced and reinforced through repeated use in games, real-life problems, songs, rhymes, and cards. Help your child to identify "FACTS I KNOW" and the "FACTS I AM WORKING ON." Think of regular and convenient times to review these facts, such as waiting in line, driving in a car, riding the train, reading time, etc.

We hope that you will enjoy the activities, extend them, create new ones and have fun!

We welcome your feedback on the calendar (angela.allen@brookline.k12.ma.us).

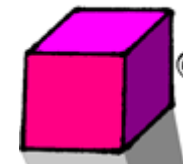
Public Schools of Brookline
K-8 Mathematics Department
Revised Spring 2010



July

Fourth Grade Calendar

Brookline



Directions: Complete **any** 20 math boxes and color in the box after you complete it. Return the Math Calendar to school in the fall.

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--|---|---|---|---|--|--|
| 3×4 3×5 7×6 7×7 What clues help you? Skip count by 3s forward & backward. | Play Chairs on the web.* Mode: Guess If you have 8 tables, what's the greatest number of people you can seat in a line? | How many different ways can you make \$3.25? How many quarters can you have if you have \$3.25? | Record the temperature for 5 days. Temp _____ Temp _____ Temp _____ Temp _____ Temp _____ | Use your temperature data to create a bar graph. What do you notice? | Play the game Close to 1000. (see directions) | 4×4 5×5 6×6 7×7 8×8 9×9 Name the pattern. |
| Begin with 12 and count by 3s to 36. Begin with 12 and count by 4s to 48. | Play Product Game on the web.* Read the directions carefully. Move the rectangles at the bottom to try to get 4 products in a row. | 25×2 25×3 25×4 25×5 25×6 25×7 What's your strategy? | Read •Jump Kangaroo, Jump! By Stuart Murphy. Divide 24 toothpicks into equal groups. What is $\frac{1}{3}$ of 24? | What time is it now? What time will it be in 6 $\frac{1}{2}$ hours? What time was it 15 minutes ago? 18 minutes ago? | Play a game like ΔCheckers, Mancala, Chess, Blokus or Soduko. | Write down the #s you see in 2 license plates. Come up with 4 math problems with these #s. |
| How many Cheerios or macaroni can fit in a $\frac{1}{2}$ cup? Estimate how many Cheerios or macaroni would fit in 1 cup? What about $\frac{1}{4}$ cup? | If you took a $\frac{1}{2}$ cup of Cheerios or macaroni and lined them up, how long do you estimate your line will be? Measure your line using cm and inches? | $325 + \underline{\hspace{1cm}} = 375$ $500 = 475 + \underline{\hspace{1cm}}$ $\underline{\hspace{1cm}} + 550 = 600$ $275 + \underline{\hspace{1cm}} = 350$ $300 - \underline{\hspace{1cm}} = 225$ $220 + \underline{\hspace{1cm}} = 350$ $440 = 125 + \underline{\hspace{1cm}}$ What's your strategy? | If Mia painted 400 finger nails, how many people did she see? If the vet examined 26 dogs, how many paws did she see? | Read •Spaghetti and Meatballs for All by Marilyn Burns. If 64 guests sit at tables of 4 people, how many tables do you need? Write an equation. | If the movie actually began at 7:05 and finished at 8:45, how much time elapsed? If you left home at 6:35 and returned at 9:05, how long were you out? | Read ▼Amanda Bean's Amazing Dream by C. Neuschwander. A farmer has 10 cows, 15 ducks, 12 pigs. How many legs are on the farm? |
| Play the game What's the Difference? (see directions) | Survey 20 people about their favorite ice cream or popsicle flavor. Create a pictograph to show the results. Include a key that uses a symbol that is worth >1 . | What number am I? I am less than 25×10 and greater than 22×10 . I am a multiple of 5. I am odd. The sum of my digits is 10. | Play Concentration on the web.* Choose cards: fractions games: face down Draw pictures that represent: $\frac{1}{4}$, $\frac{2}{3}$, $\frac{1}{2}$, $\frac{3}{4}$. | $134 + 10$ $144 + 100$ $244 + 20$ $264 + 200$ $384 - 30$ $464 - 10$ What's your strategy? | As of today's date, record the Wins and Losses of the Red Sox this season. Estimate wins/ losses at the end of the season. Explain your thinking to an adult. | Which Red Sox player has the highest Batting Average? Who has the lowest? What is the difference? |

* Website Directions: Go to: **illuminations.nctm.org** Click on **ACTIVITIES**. Click on **3-5** and press **SEARCH**.

grade 3.July calendar.10

• Book is available through Brookline's public libraries or Minuteman library network (▼) Δ These games are available in stores.

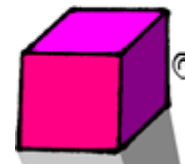
Parent's Signature: _____

Child's Name: _____

Created by the Math Department, Public Schools of Brookline, Revised Spring 2010



August Fourth Grade Calendar Brookline



Directions: Complete **any** 20 math boxes and color in the box after you complete it. Return the Math Calendar to school in the fall.

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | | | | | | | | | | |
|---|--|---|--|--|---|--|----|---|-----|-------|-----|---|-------|--|---|--|
| Play a game like ΔCheckers, Mancala, Chess, Blokus or Soduko. | What number do you add to 74 to get 100? What are 2 numbers you can add to 245 to get 300? 245 + ____ + ____ = 300 | Count the change an adult has this morning. Count the change an adult has this evening. What’s the difference? | 4 x 4 4 x 5 4 x 6 4 x 7 What clues help you? Skip count by 4s forward & backward. | Find out your height and/or weight. How many telephone books would it take to equal your weight? Your height? Estimate and check. | 6 x 4 6 x 5 6 x 6 6 x 7 What clues help you? Skip count by 6s forward & backward. | Explore a website* Play Bobbie Bear. Choose: Customize How many outfits can you make with 4 shirts and 3 pants? | | | | | | | | | | |
| Roll 2 dice together and multiply to find the <u>product</u> . Record the products. Do this 25 times. Create a bar graph with the results. What did you notice? | Play Pan Balance-Shapes (Fixed Values) on the web.* Find 3 combinations that balance 2 purple triangles. | I am thinking of an even number. It is <i>greater</i> than 7x6 and less than 6x10. It has a factor of 7. What number am I? | Read ▼One Hundred Hungry Ants by Elinor Pinczes. Describe 4 ways to group 108 ants? | How many hours did you sleep last night? Bedtime: _____ Woke up: _____ Hours:____ Min: ____ | Play a game Product Game. (see directions) | 60 ÷ 5 = ____ 55 ÷ ____ = 5 50 ÷ 5 = ____ 45 ÷ ____ =5 35 ÷ 5 = ____ What’s your strategy? | | | | | | | | | | |
| 8 x 4 8 x 5 8 x 6 8 x 7 What clues help you? Skip count by 8s forward & backward. | Play a game Pairs of 100. (see directions) | 9 x 4 9 x 5 9 x 6 9 x 7 What clues help you? Skip count by 9s forward & backward. | Finish the table. What’s the rule? <table><tr><th>Input</th><th>Output</th></tr><tr><td>2</td><td>50</td></tr><tr><td>4</td><td>100</td></tr><tr><td>_____</td><td>200</td></tr><tr><td>6</td><td>_____</td></tr></table> | Input | Output | 2 | 50 | 4 | 100 | _____ | 200 | 6 | _____ | Read ●Fraction Fun by David Adler. Which is larger ⅔ or ¾? How do you know? Prove it. | If you called your cousin in London at 8:00 pm Boston time, what time would it be in London? (hint: London is 5 hours ahead) | Find the perimeter of the front of a cereal box in cm. Can you draw a different shape with the same perimeter? Use a cm ruler. |
| Input | Output | | | | | | | | | | | | | | | |
| 2 | 50 | | | | | | | | | | | | | | | |
| 4 | 100 | | | | | | | | | | | | | | | |
| _____ | 200 | | | | | | | | | | | | | | | |
| 6 | _____ | | | | | | | | | | | | | | | |
| Read ●Dave’s Down-to-Earth Rock Shop by Stuart Murphy. Collect 24 rocks (or shells). How many different ways can you organize them? | Find a shoebox and measure the <u>perimeter</u> of the top of the box. If a stamp is 1 inch by 1 inch, how many stamps would you need to make a border around the top? | Looking at a calendar, ask a friend to choose 4 days that form a square. Your friend should tell you only the sum of the 4 dates and you determine the dates. | Play Concentration on the web.* Choose <i>cards: fractions, games: face down</i> Make matching cards on index cards and play with a friend. | How many seconds are in 5 minutes? How many minutes are in 4 hours? How many seconds are in 2 ½ minutes? | Is there a street parallel to your street? Look on a map and find 2 streets that are parallel and 2 streets that are perpendicular to each other. | Estimate the number of pieces of flatware in your kitchen. Count to check. How many people could you serve at 1 time? Est:_____ Exact_____ | | | | | | | | | | |

* Website Directions: Go to: **illuminations.nctm.org** Click on **ACTIVITIES**. Click on **3-5** and press **SEARCH**.

grade 3.August calendar.10

● Book is available through Brookline's public libraries or Minuteman library network (▼) Δ These games are available in stores.

Parent's Signature: _____

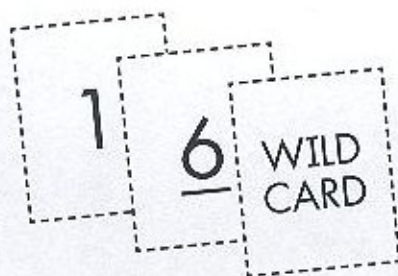
Child's Name: _____



Close to 1,000

You need

- Digit Cards
(1 deck per pair)
- *Close to 1,000*
Recording Sheet



Play with a partner.

- 1 Deal out eight Digit Cards to each player.
- 2 Use any six cards to make two numbers. For example, a 6, a 5, and a 2 could make 652, 625, 526, 562, 256, or 265. Wild cards can be used as any digit. Try to make two numbers that, when added together, give you a total that is close to 1,000.
- 3 Write these numbers and their total on the *Close to 1,000* Recording Sheet. For example, $652 + 347 = 999$.
- 4 Find your score. Your score is the difference between your total and 1,000.
- 5 Put the cards you used in a discard pile. Keep the two cards you did not use for the next round.
- 6 For the next round, deal six cards to each player. Make more numbers that have a sum close to 1,000.
- 7 When you run out of cards, mix up the discard pile and use them again.
- 8 After five rounds, add your scores to find your final score. The player with the lower final score wins.

Variation

Write the score with plus and minus signs to show whether your total is less than or greater than 1,000. For example, if your total is 999, your score is -1 . If your total is 1,005, your score is $+5$. The total of these two scores is $+4$. Your goal is to get a final score for five rounds that is as close to 0 as possible.

Name _____

Date _____

**Landmarks and Large Numbers****Close to 1,000** Recording Sheet

| Game 1 | Score |
|--------------------------------|-------|
| Round 1: _____ + _____ = _____ | |
| Round 2: _____ + _____ = _____ | |
| Round 3: _____ + _____ = _____ | |
| Round 4: _____ + _____ = _____ | |
| Round 5: _____ + _____ = _____ | |
| Final Score | _____ |

| Game 2 | Score |
|--------------------------------|-------|
| Round 1: _____ + _____ = _____ | |
| Round 2: _____ + _____ = _____ | |
| Round 3: _____ + _____ = _____ | |
| Round 4: _____ + _____ = _____ | |
| Round 5: _____ + _____ = _____ | |
| Final Score | _____ |

Pairs of 100

Materials: Pairs of 100 Recording Sheet
Numeral Cards from 0 - 9

Players: 2

Object: To find pairs of numbers with a sum of 100.

Note: To play the game more than once, make multiple copies of the recording sheet before using it. Alternately, put the recording sheet in a clear sheet protector, use a dry erase marker and the sheet can be reused.

How to Play:

1. Mix the cards and place them face down.
2. One player picks a card to be the tens digit of a number. The other picks a card to be the ones digit. Record the number on the recording sheet under **Number We Picked**. Return the cards to the pile.
3. One player colors in the squares on the 10 x 10 grid to represent the number picked, using rows of 10 and ones as needed.
4. The other player determines how many squares are not colored in, and records the number in the row **Number Needed to Make 100**.
5. Players switch roles for each round. Players can challenge themselves to find the second number without using the 100 grid.

Pairs of 100

| | | | | | | | | | |
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| | | | | | |
|--------------------------------------|--|--|--|--|--|
| Number We Picked | | | | | |
| Number Needed to Make 100 | | | | | |

| | | | | | |
|--------------------------------------|--|--|--|--|--|
| Number We Picked | | | | | |
| Number Needed to Make 100 | | | | | |

The Product Game

Materials: 2 paperclips, and 2 different colored game pieces (for example: coins, beans, or colored cubes. You will need several of each.)

Object of the Game: To be the first to get 4 in a row, horizontally, vertically or diagonally.

How to Play: The first player places the paperclips on any 2 of the 9 numbers below, multiplies the numbers (*factors*), and places a game piece on the answer (*product*) in the grid. ***Factor \times Factor = Product***

The second player moves one of the paperclips to a new factor, finds the product, and marks their product with a different color game piece. Play continues until one player has marked four products in a row, column, or diagonal.

Note: It's OK to place 2 paperclips on the same factor: ($5 \times 5 = 25$)

(Want to play against the computer? Try <http://illuminations.nctm.org/ActivitySearch.aspx> and search "product")

| | | | | | |
|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 12 | 14 |
| 15 | 16 | 18 | 20 | 21 | 24 |
| 25 | 27 | 28 | 30 | 32 | 35 |
| 36 | 40 | 42 | 45 | 48 | 49 |
| 54 | 56 | 63 | 64 | 72 | 81 |

1 2 3 4 5 6 7 8 9

What's the Difference?

Object: Players roll dice to determine two three-digit numbers then find the difference between them. The difference is their score. Players add on to their scores with each round. The player who has 2000 points first is the winner.

Number of Players: 2 – 4

Materials: Dice, number line work sheets, paper and pencil for recording the scores.

Playing:

1. Players take turns. During a turn, a player rolls three dice (or one die three times) to construct a three-digit number. The player then does this again to make a second three-digit number.
2. The player then finds the difference between the numbers. Players may use a number line, compute on paper, or solve it in their heads.
3. The player reports the difference and records the score for that turn. If another player believes the difference found is not correct, that player can challenge. If the difference was incorrect, the challenging player gets the points for that turn (the correct difference between the two rolled numbers).
4. Players continue play clockwise around the circle. The player to collect 2000 points first is the winner.

Modifications:

*Players can construct two two-digit numbers and find the difference. In this version, the player who gets 200 points first is the winner.

*Players can solve only using a number line or by solving mentally. Traditional algorithms are not allowed.

Open Number Line Recording Sheet

Addition/Subtraction
BLM 11

Station: What's the Difference

Name & Date: _____

